

AMENDMENTS TO THE CLAIMS

Please amend claims 12, 17, and 30; add claims 46-59; and cancel claims 1 and 15, as indicated below:

- 1. (Cancelled)
- 2. (Previously presented) A method according to claim 16, wherein m is 0, 1 or 2 and n is 3 or 4.
- 3. (Previously presented) A method according to claim 16, wherein X is carbonyl or the group of formula II in which R_5 is H.
- 4. (Previously presented) A method according to claim 16, wherein Y is methylene.
- 5. (Previously presented) A method according to claim 16, wherein Z is an alkylene chain containing 2 to 4 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms.
- 6. (Previously presented) A method according to claim 16, wherein Z is an alkylene chain containing 2 to 4 carbon atoms optionally substituted by one or more methyl groups.
- 7. (Previously presented) A method according to claim 16, wherein R is phenyl substituted by one or two chloro substituents or R is naphthyl.
- 8. (Previously presented) A method according to claim 16, wherein R is 3-chlorophenyl; 3,4-dichlorophenyl; or 2-naphthyl.
- 9. (Previously presented) A method according to claim 16, wherein R_1 is an alkyl group containing 1 to 3 carbon atoms or is benzyl, and R_2 is an alkyl group containing 1 to 3 carbon atoms.

- 10. (Previously presented) A method according to claim 16, wherein R_1 and R_2 are both methyl or ethyl or R_1 is benzyl and R_2 is methyl.
- 11. (Previously presented) A method of treating drug misuse or other addictive disorders comprising administering a therapeutically effective amount of a compound of formula III

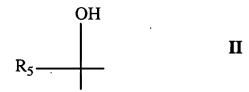
$$R_3$$
 $X-Y-S(O)_m-Z-NR_1R_2$
 R_4
 $(CH_2)_n$

and pharmaceutically acceptable salts thereof wherein:

m is 0, 1 or 2;

n is 2, 3, 4 or 5;

X is carbonyl or a group of formula II



and wherein R₅ is H or an alkyl group containing 1 to 4 carbon atoms;

Y is an alkylene chain containing 1 or 2 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms;

Z is an alkylene chain containing 2 to 5 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms;

 R_1 and R_2 , which are the same or different, are H, a straight or branched chain alkyl group containing 1 to 4 carbon atoms, an arylalkyl group in which the alkyl group contains 1 to 3 carbon atoms, provided that when R_1 is benzyl, R_2 is H or methyl; and

R₃ is halo, and R₄ is H or halo, or R₃ and R₄ together with the carbon atoms to which they are attached form a fused benzene ring;

to a patient in need thereof.

- 12. (Currently amended) A method according to claim 11, wherein R_3 is chloro and $[[R_1]]$ $\underline{R_4}$ is H, R_3 and R_4 being both chloro or R_3 and R_4 together with the carbon atoms to which they are attached forming a fused benzene ring.
- 13. (Previously presented) A method according to claim 11, wherein R_3 is chloro situated in the 3-substitution position on the phenyl ring and R_4 is H, R_3 and R_4 being both chloro and situated in the 3- and 4-substitution positions on the phenyl ring respectively, or R_3 and R_4 together with the phenyl ring to which they are attached forming a 2-naphthyl group.
- 14. (Previously presented) A method according to claim 16, wherein the compound of formula I is selected from the group consisting of:
 - 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (dimethylamino) ethylthio] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (dimethylamino) ethylsulphinyl] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (dimethylamino) ethylsulphonyl] ethanone;
 - 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (diethylamino) ethylthio] ethanone;
- 2-[2-(N-benzyl-N-methylamino) ethylthio]-1-[1-(3,4-dichlorophenyl)cyclobutyl]-ethanone;
 - 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (dimethylamino) ethylthio] ethanol;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino) propylthio] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino) propylsulphonyl] ethanone;
 - 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino) propylthio] ethanol;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino)-2-methylpropylthio]-ethanone;
 - 2-[2-(dimethylamino) ethylthio]-1-(1-(2-naphthyl) cyclobutyl] ethanone;
 - 1-[1-(3-chlorophenyl) cyclobutyl]-2-[3-(dimethylamino) propylthio] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[4- (dimethyl-amino) butylthio] ethanone;

1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dipropyl-amino) propylthio] ethanone;

1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino)-2-methylpropylthio] ethanol;

1-[1-(3,4-dichlorophenyl) cyclopentyl]-2-[3- (dimethylamino) propylthio] ethanone; and

pharmaceutically acceptable salts thereof in the form of individual enantiomers, racemates, or other mixtures of enantiomers.

15. (Cancelled)

16. (Previously presented) A method of treating drug misuse or other addictive disorders comprising administering a therapeutically effective amount of a compound of formula I

$$R \longrightarrow (CH_2)_n$$
 I

and pharmaceutically acceptable salts thereof in which

X is carbonyl or a group of formula II

in which R₅ is H or an alkyl group containing 1 to 4 carbon atoms;

Y is an alkylene chain containing 1 or 2 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms;

Z is an alkylene chain containing 2 to 5 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms;

R is phenyl optionally substituted by one or more halo substituents or R is naphthyl; and

 R_1 and R_2 which are the same or different, are H, a straight or branched chain alkyl group containing 1 to 4 carbon atoms, an arylalkyl group in which the alkyl group contains 1 to 3 carbon atoms, provided that when R_1 is benzyl, R_2 is H or methyl;

to a patient in need thereof.

17. (Currently amended) A method of reducing cravings to food or an addictive substance in a mammal comprising administering an effective amount of a compound of formula I

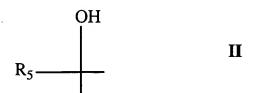
$$X-Y-S(O)_{\overline{m}}-Z-NR_1R_2$$
 $(CH_2)_n$
 I

and pharmaceutically acceptable salts thereof in which

m is 0, 1 or 2;

n is 2, 3, 4 or 5;

X is carbonyl or a group of formula II



in which R₅ is H or an alkyl group containing 1 to 4 carbon atoms;

Y is an alkylene chain containing 1 or 2 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms;

Z is an alkylene chain containing 2 to 5 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms;

R is phenyl optionally substituted by one or more halo substituents or R is naphthyl; and

 R_1 and R_2 which are the same or different, are H, a straight or branched chain alkyl group containing 1 to 4 carbon atoms, an arylalkyl group in which the alkyl group contains 1 to 3 carbon atoms, provided that when R_1 is benzyl, R_2 is H or methyl;

to the mammal in need thereof.

- 18. (Previously presented) A method according to claim 17, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.
- 19. (Cancelled)
- 20. (Previously presented) A method according to claim 17, wherein m is 0, 1 or 2 and n is 3 or 4.
- 21. (Previously presented) A method according to claim 17, wherein X is carbonyl or the group of formula II in which R₅ is H.

- 22. (Previously presented) A method according to claim 17, wherein Y is methylene.
- 23. (Previously presented) A method according to claim 17, wherein Z is an alkylene chain containing 2 to 4 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms.
- 24. (Previously presented) A method according to claim 17, wherein Z is an alkylene chain containing 2 to 4 carbon atoms optionally substituted by one or more methyl groups.
- 25. (Previously presented) A method according to claim 17, wherein R is phenyl substituted by one or two chloro substituents or R is naphthyl.
- 26. (Previously presented) A method according to claim 17, wherein R is 3-chlorophenyl; 3,4-dichlorophenyl; or 2-naphthyl.
- 27. (Previously presented) A method according to claim 17, wherein R_1 is an alkyl group containing 1 to 3 carbon atoms or is benzyl, and R_2 is an alkyl group containing 1 to 3 carbon atoms.
- 28. (Previously presented) A method according to claim 17, wherein R_1 and R_2 are both methyl or ethyl or R_1 is benzyl and R_2 is methyl.
- 29. (Currently amended) A method of reducing cravings to food or an addictive substance in a mammal comprising administering an effective amount of a compound of formula III

$$R_3$$
 $X-Y-S(O)_m$ $Z-NR_1R_2$ R_4 (CH₂)_n

and pharmaceutically acceptable salts thereof wherein:

m is 0, 1 or 2;

n is 2, 3, 4 or 5;

X is carbonyl or a group of formula II



and wherein R₅ is H or an alkyl group containing 1 to 4 carbon atoms;

Y is an alkylene chain containing 1 or 2 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms;

Z is an alkylene chain containing 2 to 5 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms;

 R_1 and R_2 , which are the same or different, are H, a straight or branched chain alkyl group containing 1 to 4 carbon atoms, an arylalkyl group in which the alkyl group contains 1 to 3 carbon atoms, provided that when R_1 is benzyl, R_2 is H or methyl; and

R₃ is halo, and R₄ is H or halo, or R₃ and R₄ together with the carbon atoms to which they are attached form a fused benzene ring;

to the mammal in need thereof.

- 30. (Currently amended) A method according to claim 29, wherein R_3 is chloro and $[[R_1]]$ $\underline{R_4}$ is H, R_3 and R_4 being both chloro or R_3 and R_4 together with the carbon atoms to which they are attached forming a fused benzene ring.
- 31. (Previously presented) A method according to claim 29, wherein R_3 is chloro situated in the 3-substitution position on the phenyl ring and R_4 is H, R_3 and R_4 being both chloro and situated in the 3- and 4-substitution positions on the phenyl ring respectively, or R_3 and R_4 together with the phenyl ring to which they are attached forming a 2-naphthyl group.

- 32. (Previously presented) A method according to claim 17, wherein the compound of formula I is selected from the group consisting of:
 - 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (dimethylamino) ethylthio] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (dimethylamino) ethylsulphinyl] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (dimethylamino) ethylsulphonyl] ethanone;
 - 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (diethylamino) ethylthio] ethanone;
- 2-[2-(N-benzyl-N-methylamino) ethylthio]-1- [1-(3,4-dichlorophenyl)cyclobutyl]-ethanone;
 - 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (dimethylamino) ethylthio] ethanol;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino) propylthio] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino) propylsulphonyl] ethanone:
 - 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino) propylthio] ethanol;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino)-2-methylpropylthio]-ethanone;
 - 2-[2-(dimethylamino) ethylthio]-1-(1-(2-naphthyl) cyclobutyl] ethanone;
 - 1-[1-(3-chlorophenyl) cyclobutyl]-2-[3-(dimethylamino) propylthio] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[4- (dimethyl-amino) butylthio] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dipropyl-amino) propylthio] ethanone:
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino)-2-methylpropylthio] ethanol;
- 1-[1-(3,4-dichlorophenyl) cyclopentyl]-2-[3- (dimethylamino) propylthio] ethanone; and

pharmaceutically acceptable salts thereof in the form of individual enantiomers, racemates, or other mixtures of enantiomers.

33. (Previously presented) A method according to claim 20, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.

- 34. (Previously presented) A method according to claim 21, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.
- 35. (Previously presented) A method according to claim 22, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.
- 36. (Previously presented) A method according to claim 23, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.
- 37. (Previously presented) A method according to claim 24, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.
- 38. (Previously presented) A method according to claim 25, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.
- 39. (Previously presented) A method according to claim 26, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.
- 40. (Previously presented) A method according to claim 27, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.
- 41. (Previously presented) A method according to claim 28, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.
- 42. (Previously presented) A method according to claim 29, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.
- 43. (Previously presented) A method according to claim 30, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.
- 44. (Previously presented) A method according to claim 31, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.

- 45. (Previously presented) A method according to claim 32, wherein the addictive substance is cocaine, amphetamine, nicotine, opiates, tobacco, alcohol or ecstasy.
- 46. (New) A method of reducing cravings to food in a mammal comprising administering an effective amount of a compound of formula I

and pharmaceutically acceptable salts thereof in which

m is 0, 1 or 2;

n is 2, 3, 4 or 5;

X is carbonyl or a group of formula II

in which R₅ is H or an alkyl group containing 1 to 4 carbon atoms;

Y is an alkylene chain containing 1 or 2 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms;

Z is an alkylene chain containing 2 to 5 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms;

R is phenyl optionally substituted by one or more halo substituents or R is naphthyl; and

 R_1 and R_2 which are the same or different, are H, a straight or branched chain alkyl group containing 1 to 4 carbon atoms, an arylalkyl group in which the alkyl group contains 1 to 3 carbon atoms, provided that when R_1 is benzyl, R_2 is H or methyl;

to the mammal in need thereof, wherein the method is not used to treat obesity.

- 47. (New) A method according to claim 46, wherein m is 0, 1 or 2 and n is 3 or 4.
- 48. (New) A method according to claim 46, wherein X is carbonyl or the group of formula II in which R_5 is H.
- 49. (New) A method according to claim 46, wherein Y is methylene.
- 50. (New) A method according to claim 46, wherein Z is an alkylene chain containing 2 to 4 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms.
- 51. (New) A method according to claim 46, wherein Z is an alkylene chain containing 2 to 4 carbon atoms optionally substituted by one or more methyl groups.
- 52. (New) A method according to claim 46, wherein R is phenyl substituted by one or two chloro substituents or R is naphthyl.
- 53. (New) A method according to claim 46, wherein R is 3-chlorophenyl; 3,4-dichlorophenyl; or 2-naphthyl.
- 54. (New) A method according to claim 46, wherein R_1 is an alkyl group containing 1 to 3 carbon atoms or is benzyl, and R_2 is an alkyl group containing 1 to 3 carbon atoms.
- 55. (New) A method according to claim 46, wherein R_1 and R_2 are both methyl or ethyl or R_1 is benzyl and R_2 is methyl.
- 56. (New) A method according to claim 46, wherein the compound of formula I is selected from the group consisting of:

- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (dimethylamino) ethylthio] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (dimethylamino) ethylsulphinyl] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (dimethylamino) ethylsulphonyl] ethanone;
 - 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (diethylamino) ethylthio] ethanone;
- 2-[2-(N-benzyl-N-methylamino) ethylthio]-1- [1-(3,4-dichlorophenyl)cyclobutyl]-ethanone;
 - 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[2- (dimethylamino) ethylthio] ethanol;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino) propylthio] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino) propylsulphonyl] ethanone;
 - 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino) propylthio] ethanol;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino)-2-methylpropylthio]-ethanone;
 - 2-[2-(dimethylamino) ethylthio]-1-(1-(2-naphthyl) cyclobutyl] ethanone;
 - 1-[1-(3-chlorophenyl) cyclobutyl]-2-[3-(dimethylamino) propylthio] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[4- (dimethyl-amino) butylthio] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dipropyl-amino) propylthio] ethanone;
- 1-[1-(3,4-dichlorophenyl) cyclobutyl]-2-[3- (dimethylamino)-2-methylpropylthio] ethanol:
- 1-[1-(3,4-dichlorophenyl) cyclopentyl]-2-[3- (dimethylamino) propylthio] ethanone; and

pharmaceutically acceptable salts thereof in the form of individual enantiomers, racemates, or other mixtures of enantiomers.

57. (New) A method of reducing cravings to food in a mammal comprising administering an effective amount of a compound of formula III

$$R_3$$
 $X-Y-S(O)_m-Z-NR_1R_2$ R_4 $(CH_2)_n$

and pharmaceutically acceptable salts thereof wherein:

m is 0, 1 or 2;

n is 2, 3, 4 or 5;

X is carbonyl or a group of formula II

$$R_5$$
 II

and wherein R₅ is H or an alkyl group containing 1 to 4 carbon atoms;

Y is an alkylene chain containing 1 or 2 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms;

Z is an alkylene chain containing 2 to 5 carbon atoms optionally substituted by one or more alkyl groups containing 1 to 3 carbon atoms;

 R_1 and R_2 , which are the same or different, are H, a straight or branched chain alkyl group containing 1 to 4 carbon atoms, an arylalkyl group in which the alkyl group contains 1 to 3 carbon atoms, provided that when R_1 is benzyl, R_2 is H or methyl; and

R₃ is halo, and R₄ is H or halo, or R₃ and R₄ together with the carbon atoms to which they are attached form a fused benzene ring;

to the mammal in need thereof, wherein the method is not used to treat obesity.

58. (New) A method according to claim 57, wherein R_3 is chloro and R_4 is H, R_3 and R_4 being both chloro or R_3 and R_4 together with the carbon atoms to which they are attached forming a fused benzene ring.

15

59. (New) A method according to claim 57, wherein R_3 is chloro situated in the 3-substitution position on the phenyl ring and R_4 is H, R_3 and R_4 being both chloro and situated in the 3- and 4-substitution positions on the phenyl ring respectively, or R_3 and R_4 together with the phenyl ring to which they are attached forming a 2-naphthyl group.